

CLAIMS

We claim:

1. A device for connecting a heart valve device to a first mass comprising:
 - a gasket body comprising a longitudinal axis central to the gasket body, the gasket body further comprising an inner gasket radius, an outer gasket radius and a complementary attachment device,
 - wherein the complementary attachment device comprises an inner attachment radius and an outer attachment radius,
 - wherein the inner gasket radius, the outer gasket radius, the inner attachment radius and the outer attachment radius are measured from the longitudinal axis, and
 - wherein the outer attachment radius is greater than the outer gasket radius.
2. The device of Claim 1, wherein the inner attachment radius is greater than the outer gasket radius.
3. The device of Claim 1, wherein the inner attachment radius is substantially equal to the outer gasket radius.
4. The device of Claim 1, wherein the inner attachment radius is less than the outer gasket radius.
5. The device of Claim 4, wherein the inner attachment radius is greater than the inner gasket radius.

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2 6. The device of Claim 1, wherein the inner attachment radius is greater than the inner
3 gasket radius.

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5 7. The device of Claim 1, wherein the inner attachment radius is substantially equal to
6 the inner gasket radius.

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8 8. The device of Claim 1, wherein the inner attachment radius is less than the inner
9 gasket radius.

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11 9. The device of Claim 1, wherein the complementary attachment device is resilient.

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13 10. The device of Claim 1, wherein the complementary attachment device is deformable.

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15 11. The device of Claim 1, wherein the complementary attachment device comprises an
16 active obstacle.

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18 12. The device of Claim 11, wherein the obstacle comprises a spindle.

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20 13. The device of Claim 11, wherein the obstacle is expandable.

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22 14. The device of Claim 1, wherein the complementary attachment device comprises a
23 passive obstacle.

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2 15. The device of Claim 14, wherein the obstacle forms a tortuous channel.

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4 16. The device of Claim 1, wherein the complementary attachment device comprises an
5 internal obstacle.

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7 17. The device of Claim 1, further comprising a flange attached to the gasket body.

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9 18. The device of Claim 17, wherein the flange comprises a sewing ring.

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11 19. The device of Claim 17, wherein the flange comprises a port, and wherein the port
12 comprises the complementary attachment device.

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14 20. The device of Claim 17, wherein the flange comprises the complementary
15 attachment device.

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17 21. The device of Claim 17, wherein the flange comprises a fabric.

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19 22. The device of Claim 1, wherein the complementary attachment device comprises a
20 friction lock.

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22 23. The device of Claim 1, wherein the complementary attachment device comprises a
23 space-occupying element.

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2 24. The device of Claim 1, wherein the complementary attachment element comprises a
3 receptacle.

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5 25. The device of Claim 24, wherein the receptacle comprises guide blocks.

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7 26. The device of Claim 25, wherein the receptacle further comprises a slide rod.

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9 27. The device of Claim 24, wherein the receptacle comprises a slide rod.

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11 28. The device of Claim 24, wherein the receptacle comprises a high-friction channel.

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13 29. The device of Claim 24, wherein the receptacle comprises a can.

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15 30. The device of Claim 29, wherein the can is deformable.

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17 31. The device of Claim 29, wherein the can is resilient.

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19 32. The device of Claim 29, wherein the can is fixedly attached to the gasket body.

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21 33. The device of Claim 29, wherein the can is rotatably attached to the gasket body.

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23 34. The device of Claim 29, wherein the can comprises solid walls.

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2 35. The device of Claim 29, wherein the can comprises a wireframe.

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4 36. The device of Claim 29, wherein the can comprises a wrapped plate.

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6 37. The device of Claim 29, wherein the can comprises a ratchet tooth.

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8 38. The device of Claim 37, further comprising an attachment device configured to
9 interact with the can.

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11 39. The device of Claim 38, wherein the attachment device comprises a digitation.

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13 40. The device of Claim 29, wherein the can comprises a first piece and a second piece,
14 and wherein the first piece comprises a collet.

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16 41. The device of Claim 1, wherein the complementary attachment device is integral
17 with the gasket body.

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19 42. The device of Claim 1, wherein the complementary attachment device comprises a
20 first cam.

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22 43. The device of Claim 42, wherein the first cam is rotatably attached to the gasket
23 body.

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2 44. The device of Claim 42, wherein the complementary attachment device comprises a
3 second cam.

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5 45. The device of Claim 42, wherein the second cam is rotatably attached to the gasket
6 body.

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8 46. The device of Claim 1, wherein the complementary attachment device further
9 comprises a first fenestration.

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11 47. The device of Claim 46, wherein the complementary attachment device further
12 comprises a first end, a second end, and a second fenestration between the first
13 fenestration and the second end,

14 wherein the first fenestration is between the first end and the second end,

15 and wherein the complementary attachment device further comprises a first length
16 between the first fenestration and the second fenestration.

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18 48. The device of Claim 47, further comprising an attachment device, wherein the device
19 is configured for the attachment device to pass through the first fenestration.

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21 49. The device of Claim 48, wherein the device is configured for the attachment device
22 to pass through the first length.

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1 50. The device of Claim 49, wherein the device is configured for the attachment device
2 to pass through the second fenestration.

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4 51. The device of Claim 1, further comprising a mechanical valve attached to the gasket
5 body.

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7 52. The device of Claim 1, further comprising a biological valve attached to the gasket
8 body.

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10 53. The device of Claim 1, further comprising a leaflet attached to the gasket body.

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12 54. The device of Claim 1, further comprising an attachment device adapted to interact
13 with the complementary attachment device.

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15 55. The device of Claim 54, wherein the attachment device is knotless.

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17 56. The device of Claim 54, wherein the attachment device comprises a suture.

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19 57. The device of Claim 54, wherein the attachment device comprises a snare.

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21 58. The device of Claim 54, wherein the attachment device comprises a stud.

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23 59. The device of Claim 54, wherein the attachment device comprises a spike.

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2 60. The device of Claim 54, wherein the attachment device comprises a hook.

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4 61. The device of Claim 54, wherein the attachment device comprises a barb.

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6 62. The device of Claim 54, wherein the attachment device comprises a staple.

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8 63. The device of Claim 54, wherein the attachment device comprises a brad.

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10 64. The device of Claim 54, wherein the attachment device comprises a digitation.

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12 65. The device of Claim 54, wherein the attachment device comprises a radially
13 expandable portion.

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15 66. A device for connecting a heart valve device to a first mass comprising:

16 a gasket body comprising a longitudinal axis central to the gasket body, the gasket
17 body further comprising an inner gasket radius, an outer gasket radius, and a
18 complementary attachment device,

19 wherein the complementary attachment device comprises an inner attachment
20 radius and an outer attachment radius,

21 wherein the inner gasket radius, the outer gasket radius, the inner attachment
22 radius and the outer attachment radius are measured from the longitudinal axis, and
23 wherein the inner attachment radius is less than the inner gasket radius.

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2 67. The device of Claim 66, wherein the outer attachment radius is greater than the outer
3 gasket radius.

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5 68. The device of Claim 66, wherein the outer attachment radius is substantially equal to
6 the outer gasket radius.

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8 69. The device of Claim 66, wherein the outer attachment radius is less than the outer
9 gasket radius.

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11 70. The device of Claim 69, wherein the outer attachment radius is greater than the inner
12 gasket radius.

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14 71. The device of Claim 66, wherein the outer attachment radius is greater than the inner
15 gasket radius.

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17 72. The device of Claim 66, wherein the outer attachment radius is substantially equal to
18 the inner gasket radius.

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20 73. The device of Claim 66, wherein the outer attachment radius is less than the inner
21 gasket radius.

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23 74. A device for connecting a heart valve device to a first mass comprising:

1 a gasket body, and
2 a discrete receptacle attached to the gasket body.

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4 75. A heart valve device comprising:

5 a gasket body, and

6 a complementary attachment device located on an outer radial side of the gasket
7 body, wherein the complementary attachment device is configured to receive an
8 attachment device.

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10 76. A method of attaching a gasket body to a first mass, the method comprising:

11 deploying an attachment device through a first mass and a complementary
12 attachment device, wherein the complementary attachment device is attached to the
13 gasket body, such that the complementary attachment device is adapted to fixedly couple
14 to the attachment device.

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16 77. The method of Claim 76, further comprising attaching the attachment device to the
17 first mass.

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19 78. The method of Claim 76, further comprising attaching the attachment device to the
20 complementary attachment device.

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1 79. The method of Claim 78, wherein attaching the attachment device to the
2 complementary attachment device comprises crushing the complementary attachment
3 device.
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5 80. The method of Claim 78, wherein attaching the attachment device to the
6 complementary attachment device comprises inserting a space-occupying element into
7 the complementary attachment device.
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9 81. The method of Claim 76, wherein the gasket body comprises a longitudinal axis
10 central to the gasket body, the gasket body further comprises an inner gasket radius, and
11 an outer gasket radius,
12 and wherein the complementary attachment device comprises an inner attachment
13 radius and an outer attachment radius,
14 and wherein the inner gasket radius, the outer gasket radius, the inner attachment
15 radius and the outer attachment radius are measured from the longitudinal axis,
16 and wherein the outer attachment radius is greater than the outer gasket radius.
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18 82. The method of Claim 76, wherein the gasket body comprises a longitudinal axis
19 central to the gasket body, the gasket body further comprises an inner gasket radius, and
20 an outer gasket radius,
21 and wherein the complementary attachment device comprises an inner attachment
22 radius and an outer attachment radius,

1 and wherein the inner gasket radius, the outer gasket radius, the inner attachment
2 radius and the outer attachment radius are measured from the longitudinal axis,
3 and wherein the inner attachment radius is less than the inner gasket radius.
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5 83. A method of attaching a gasket body to a first mass, the method comprising:
6 deploying an attachment device through a first mass and a complementary
7 attachment device, wherein the complementary attachment device is attached to the
8 gasket body, such that the attachment device is fixedly coupled to the complementary
9 attachment device.

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11 84. The method of Claim 83, further comprising attaching the attachment device to the
12 first mass.

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14 85. The method of Claim 83, further comprising attaching the attachment device to the
15 complementary attachment device.

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17 86. The method of Claim 85, wherein attaching the attachment device to the
18 complementary attachment device comprises crushing the complementary attachment
19 device.

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21 87. The method of Claim 85, wherein attaching the attachment device to the
22 complementary attachment device comprises inserting a space-occupying element into
23 the complementary attachment device.

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2 88. The method of Claim 83, wherein the gasket body comprises a longitudinal axis
3 central to the gasket body, the gasket body further comprises an inner gasket radius, and
4 an outer gasket radius,

5 and wherein the complementary attachment device comprises an inner attachment
6 radius and an outer attachment radius,

7 and wherein the inner gasket radius, the outer gasket radius, the inner attachment
8 radius and the outer attachment radius are measured from the longitudinal axis,

9 and wherein the outer attachment radius is greater than the outer gasket radius.

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11 89. The method of Claim 83, wherein the gasket body comprises a longitudinal axis
12 central to the gasket body, the gasket body further comprises an inner gasket radius, and
13 an outer gasket radius,

14 and wherein the complementary attachment device comprises an inner attachment
15 radius and an outer attachment radius,

16 and wherein the inner gasket radius, the outer gasket radius, the inner attachment
17 radius and the outer attachment radius are measured from the longitudinal axis,

18 and wherein the inner attachment radius is less than the inner gasket radius.

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20 90. A method of attaching a gasket body to a first mass, wherein the gasket body
21 comprises a gasket wall, the method comprising:

22 deploying an attachment device through a discrete receptacle attached to the
23 gasket body,

1 attaching the attachment device to the first mass, and
2 attaching the attachment device to the discrete receptacle.

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4 91. A method of attaching a gasket body to a first mass, the method comprising:

5 deploying an attachment device through a complementary attachment device

6 attached to the gasket body,

7 attaching the attachment device to the first mass, and

8 attaching the attachment device to the complementary attachment device,

9 wherein the complementary attachment device is located on an outer radial side of

10 the gasket body.

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